Income Distribution

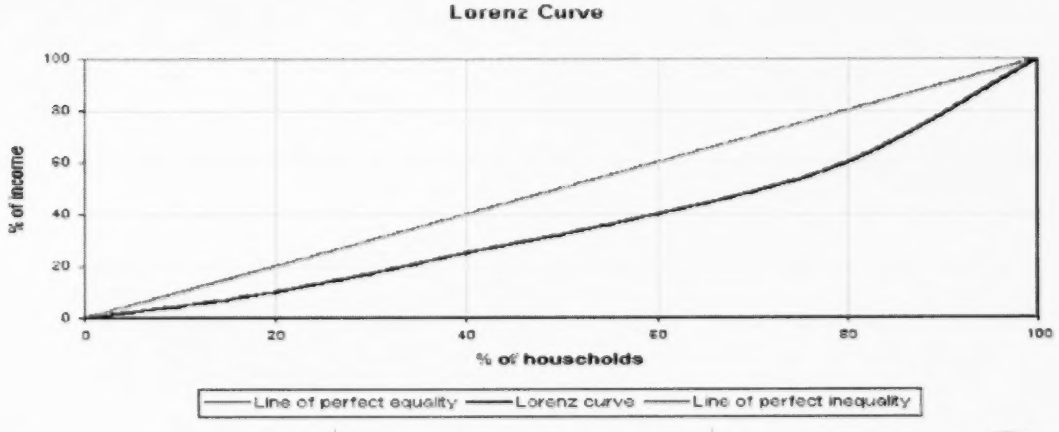
Income Distribution in the NWT

The distribution of wealth in the NWT can be seen as the degree to which income is spread over the entire territory. Monitoring the inequalities associated with the distribution of income helps to capture a true picture of the economy in the north. By gaining an understanding of the level at which income in the NWT is distributed, we gain the ability to make accurate comparisons between the various regions and jurisdictions along with national averages available.

In most cases, Gross Domestic Product (GDP) is used as a common indicator to measure the efficiency and productivity of the Northwest Territories economy. GDP can be a very powerful tool in terms of measuring such things as, per capita income, rates of economic growth, and efficiency/ productivity of individuals based on output.

By using GDP as an indicator we tend to put a broad blanket over the NWT by using in many cases territorial averages as indicators. This proves somewhat useless in trying to determine cases specific to regions or communities. Take for example per-capita income measured using GDP. If we were to see production of minerals in the North Slave region drop but at the same time see an increase in production of natural gas in the South Slave more then offset the decrease in mineral production in the North Slave, we would see overall GDP increase causing per-capita income to increase. This may be the case but it overlooks the fact that a decrease in mineral production in the north slave will have a large effect on individual's income levels in the North Slave.

For the relative distribution of income throughout the NWT we first need to develop what is called a Lorenz Curve. The Lorenz curve is a graph that shows, for the bottom x% of households, the percentage y% of the total income, which they have. The percentage of households is plotted on the x axis, the percentage of income on the y axis.



Northwest Territories

A perfectly equal income distribution in a society would be one in which every person has the same income. In this case, the bottom N% of society would always have N% of the income. Thus a perfectly equal distribution can be depicted by the straight line y=x; we call this line the line of perfect equality.

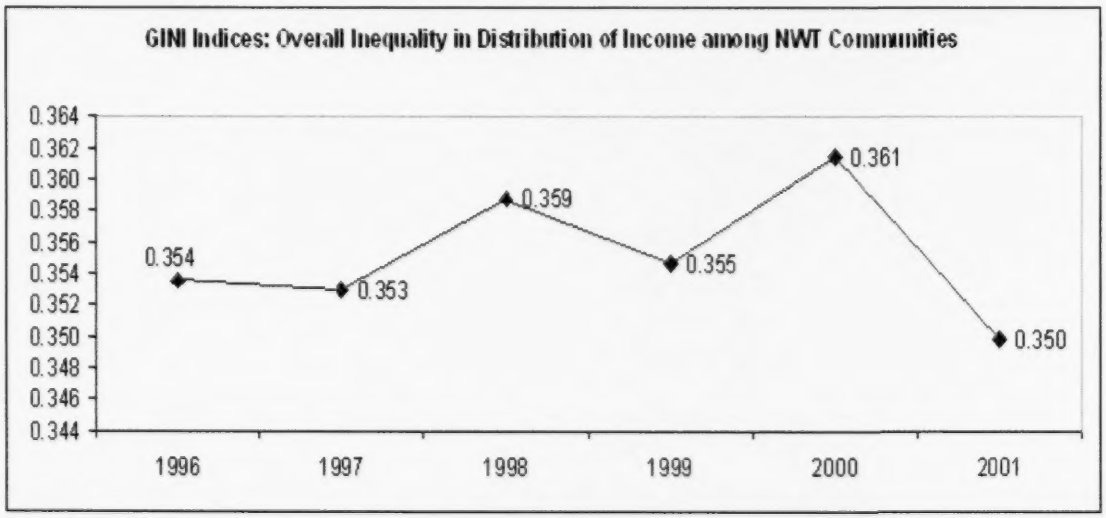
The Lorenz curve is used to calculate a Gini coefficient, this is a numerical interpratation of the level of distribution of wealth. A Gini Coefficient is the area between the line of perfect equality and the Lorenz curve, as a percentage of the area between the line of perfect equality and the line of perfect inequality. Therfore a Gini coefficient is a number between zero and one that measures the degree of inequality in the distribution of income for a given area. The coefficient would register zero (0.0 = minimum inequality) for an area in which each member received exactly the same income and it would register a coefficient of one (1.0 = maximum inequality) if one member got all the income and the rest got nothing.

With the information available from the 2001 census, it was possible to chart a Lorenz for each year (1994-2001) and compute a corresponding Gini coefficient to view the overall level of distribution of wealth. It was observed that during this period the overall distribution varied quite dramatically. The Gini ranged from 32.5-34.9 with an average coefficient of 33.5. This can be viewed as dramatic variation as a 0.1% change in a Canadian Gini Index is to be considered statistically significant.

Illustrated in the chart below we are able to see that until roughly 2000, the NWT had been experiencing an increase in disparity of income, which means fewer communities were receiving a relatively large proportion of overall income. In 2000 we began to see a shift in the direction of the Gini. This for the most part can be attributed to the increased exploration of natural resources in the north along with the construction and ongoing production of the Diavik Diamond mine. This trend of decreased disparity in the NWT can be expected to continue as Ekati has competed the construction phase and begun production, exploration for the Territories natural resources continues, the development of the Mackenzie Valley Pipeline looks more and more probable, and the recent announcement of final approval for the Snap Lake Diamond project.

As the necessary income information was not available for the years following 2001 we choose to create a Gini using information concerning the distribution of supplemental income across the NWT.

Supplemental income is a source of income provided to those who either have no income or do not generate a sufficient level of income throughout the year. As this is the case we can see that a strong correlation exists between income and supplemental income. Though the correlation is negative we will tend to see both Gini's move in



the same direction and in doing so provide a solid indicator to the other's future movement. If we tended to see a flatter distribution of income throughout the north, we would assume that the distribution of supplemental income to also become flatter. This would be the case as the communities previously needing a relatively large portion of supplemental income would no longer be in such need as a greater distribution of income will see income spread out more evenly to these communities.

From supplemental income data obtained, It was apparent that the NWT has dramatically decreased supplemental income payments throughout the NWT, this can be partley attributed to the recent growth we have seen in the exploration and extraction of natural resources along with the an overall growth the NWT economy has experianced during this time.

With the given data we were able to calculate a Gini measuring the disparity of supplemental income in the north. Given the chart below we are able to see both, that the supplemental income followed the same direction as the Gini produced for income up until 2000, along with confirming the expected movement post 2001.

The Gini is not without imperfections. The main concern surrounding the coefficient is with the validity of the data collected. Though the Gini is a widely used indicator there is currently no standardized method of calculation, meaning comparisons of Gini's must be viewed with caution to maintain objectivity. Also, like most other income statistics the Gini has it's limitations. For instance, households differ in size and average age, but these differences are not reflected in the table above. Neither is the fact that the amount of time over which income is earned affects the shape of the Lorenz curve. Larger households tend to earn more than smaller households. People in there thirties tend to earn more than people in their twenties. Households with four or five members, with more than one person working, and whose working members are between 35 and 55 tended to earn more than other households. This may be cause for concern as the NWT experiences; first, a large portion of territorial employment is seasonal, second, the NWT experiences a large population under the age of 15. Over 25% of the population is under the age of 15 and therefore unable to contribute to household income.